

Northwest Missouri Cellular Limited Partnership Phase II E911 Report to the  
FCC  
November 9, 2000

In accordance with the requirements of section 20.18(h) of the Commission's rules<sup>1</sup> and The Wireless Telecommunications Bureau's Public Notice released September 14, 2000,<sup>2</sup> Northwest Missouri Cellular Limited Partnership ("NWMC"), the B block cellular licensee for Missouri RSA 1, hereby respectfully submits the following information to the Wireless Telecommunications Bureau ("WTB's") concerning its plans for implementation of wireless Enhanced 911 ("E911") Phase II Automatic Location Identification ("ALI") systems.

Please note that for each numbered section of this report WTB's specific inquiry is italicized and Northwest Missouri Cellular Limited Partnership's response is in regular typeface.

**Background/Contact Information**

(1) *Carrier Identifying Information*: Northwest Missouri Cellular Limited Partnership, TRS # 812784.

(2) *Contact Information*: Brad Lager, General Manager  
Northwest Missouri Cellular Limited Partnership  
1114A South Main, Maryville, Missouri 64468  
(660) 582-3334 (voice), (660) 582-3380 (fax)  
e-mail: [nwc@asde.net](mailto:nwc@asde.net) ;

and

Michael K. Kurtis, Esquire  
Kurtis & Associates, P.C.  
2000 M Street, NW Suite 600  
Washington, D.C. 20036  
(202) 328-4500 (voice), (202) 328-1231(fax)  
email: [mkurtis@kurtispc.com](mailto:mkurtis@kurtispc.com)

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<sup>1</sup> See *In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *Third Report and Order*, 14 FCC Rcd 17388, 17426-28 (1999), as modified in *Fourth Memorandum Opinion and Order*, FCC 00-326, rel. Sep. 8, 2000, at ¶¶ 75-81.

<sup>2</sup> See "Wireless Telecommunications Bureau Provides Guidance on Carrier Reports on Implementation of Wireless E911 Phase II Automatic Location Identifications," CC Docket No. 94-102, Public Notice DA 00-2099, rel. Sep. 14, 2000.

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**E911 Phase II Location Technology Information**

*(1) Type of Technology: Identification of the Phase II location technology(ies) that the carrier plans to deploy across its service territory, e.g., network-only, handset-only, hybrid or a combination thereof. Please also include a complete description of the technology(ies) that is/are chosen and the name of the corresponding vendor or vendors. Indicate what technology will be used in each individual area of the carrier's service territory.*

NWMC operates its Missouri RSA 1 cell sites off of the Southwestern Bell Wireless, Inc. ("SWBW") Lucent cellular switch in Kansas City, Missouri. SWBW has advised NWMC that SWBW plans to deploy a network-based technology for its analog and IS-136 service areas, which includes the Kansas City MSA, including a combination of network based technologies, including cell site and sector information, Time Difference of Arrival (TDOA), Angle of Arrival (AOA), and multipath RF mapping. SWBW has advised that it intends to select a vendor or vendors by the first quarter of 2001. As long as NWMC continues to operate its RSA off of the host SWBW, NWMC must deploy the same ALI option as that selected by SWBW. However, until such time as SWBW finalizes its precise technology/vendor selection, NWMC cannot be sure that the technology selected for the urban Kansas City market (which utilizes primarily sectorized cell sites with coverage available from multiple locations for triangulation) will provide the level of accuracy required if implemented in the NWMC RSA with its primarily omni-directional cell sites which, for the most part, provide coverage to any given area from a single cell site location thereby precluding the ability to utilize triangulation from multiple cell sites providing coverage to the same geographic area. In addition, the SWBW solution may prove to be too expensive to deploy in the rural, omni-directional environment. Accordingly, NWMC may be required to alter its plans and/or seek necessary waivers once the SWBW decision is finalized.

*(2) Testing and Verification: A description of the testing method used, or to be used, to determine the accuracy of the ALI solution(s) selected, and a description of the results of tests already conducted.*

(a) Testing Method to be Used: To determine compliance with FCC Phase II accuracy mandates, Northwest Missouri Cellular expects to use testing methods based upon those described in OET Bulletin 71.

(i) Results of Tests Already Conducted: Northwest Missouri Cellular has been advised that SWBW has conducted tests of the currently available location-technologies under consideration (AOA, TDOA, Network Assisted GPS, and RF Mapping) that were conducted during various stages of technology development, and in virtually all RF environments (urban, suburban, rural, outdoors, indoor, etc.). The data obtained in each specific trial of location technology is covered under nondisclosure agreements (NDAs) with the

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respective vendors and, therefore, has not been disclosed to NWMC. NWMC has been advised that a summary of the results of those tests in being submitted by SWBW in conjunction with its November 9, 2000 E911 filing.

(3) *Implementation Details and Schedules: A complete description of the carrier's strategy and schedule for the installation of the hardware and software needed to implement its chosen technology (handset-based, network-based or hybrid systems). For example, indicate whether both hardware and software changes will be necessary and fully describe the precise nature of the changes. In addition, please provide the roll-out schedule for the installation of the ALI technology(ies).*

(a) NWMC cannot develop its roll-out strategy or identify any specific hardware/software requirements until such time as SWBW has completed its technology/vendor selection and the ability of that selection to meet FCC mandated requirements in the rural RSA 1 market has been verified. SWBW has committed to keep NWMC informed as to its technology and deployment decisions and deployment schedules, and NWMC will amend this filing as firm information is made available to NWMC by SWBW.

(b) *Roll-out Schedules:* Deployment schedules for Phase II technology will be further dictated by PSAP requests.

(4) *PSAP Interface: A description of hardware and software changes necessary to transmit Phase II data to PSAPs and the carrier's strategy and schedule for the installation and/or modification of such hardware or software changes.*

NWMC has been advised that SWBW plans on deploying a Non-Call Associated Signaling (NCAS) network technology utilizing the newly defined network entity called a Mobile Position Center (MPC). The functionality of the MPC is defined in TIA/EIA J-STD-036, "Enhanced Wireless 9-1-1 Phase 2," a standard jointly developed by the communications industry and Public Safety. Per J-STD-036, the MPC provides the point of interface between a wireless carrier and the Public Safety network and serves as the network entity that retrieves, forwards, stores and controls position data within the location network. As with the rest of its E911 phase II plans, NWMC has been advised that SWBW is currently in the process of selecting an MPC supplier and that potential Vendors are currently in the product development stage. SWBW has advised NWMC that at least one vendor has indicated that a commercial, J-STD-036 compliant, MPC will be available in mid-2001

As with the remainder of the hardware/software, NWMC deployment and testing schedule cannot be determined until such time as SWBW finalizes its vendor selection and NWMC is able to verify operation. NWMC understands that SWBW will disclose in its November 9, 2000 E911 filing whether software upgrades will be required to support MPC functionality in its Kansas City cellular switch and the timeframe for the implementation of any such upgrades.

